REFORMING QUERIES TO SELECTIVELY AUDIT ACCESSES TO ROWS WITHIN A RELATIONAL DATABASE

ABSTRACT

One embodiment of the present invention provides a system that selectively audits accesses to a relational database. The system receives a query at the relational database and modifies the query so that processing the query causes an audit record to be created and recorded for rows in relational tables that are accessed by the query and that satisfy an auditing condition. Next, the system processes the modified query to produce a query result. This processing causes an audit record to be created for rows in relational tables that are accessed by the query and that satisfy the auditing condition. The system records the audit record in an audit record store, and then returns the query result. In one embodiment of the present invention, if the query includes a select statement, the system inserts a case statement into the select statement. This case statement calls a function that causes the audit record to be created and recorded if the auditing condition is satisfied. In a variation on this embodiment, the case statement is evaluated near the end of the query processing so that the case statement is evaluated only after other conditions of the query are satisfied. In this way, an audit record is created only for rows that are actually accessed by the query.